

**ABSTRACT**

Disclosed is a system and method for providing backward compatible transmitter diversity in an orthogonal frequency division modulated (OFDM) communication system.

According to one aspect of the invention, a method for providing backward compatible transmitter diversity includes the steps of: receiving an input data bit stream; transforming it into an OFDM symbol stream comprised of even and odd symbols; dividing the OFDM symbol stream into a first symbol sub-stream and a second symbol sub-stream; processing the first symbol sub-stream by a first processing block to output a first processed symbol sub-stream; processing the second symbol sub-stream by a second processing block to output a second processed symbol sub-stream; transmitting the first processed symbol sub-stream from a first diversity antenna; and transmitting the second processed symbol sub-stream from a second diversity antenna and both are transmitted over non-overlapping frequencies.